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SURVEY OF LITERACY SKILLS USED IN DAILY ACTIVITIES

Highlights of the Report on the Literacy Skills of Albertans

May 1991

Alberta
ADVANCED EDUCATION
Research and Information
Support Branch

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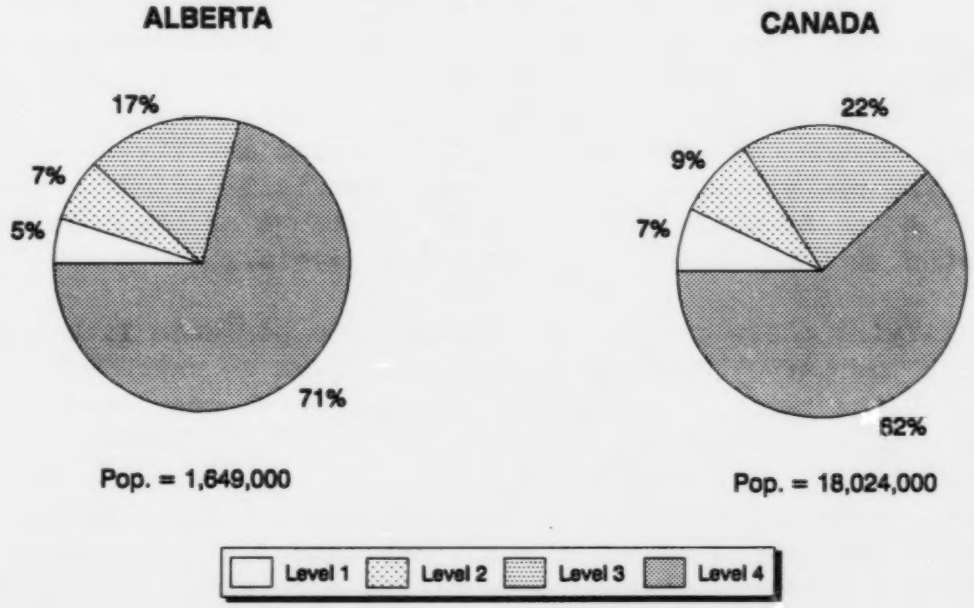
In October of 1989, Statistics Canada conducted the Survey of Literacy Skills Used in Daily Activities (LSUDA) in order to directly assess the functional literacy skills of Canadians aged 16-69 years. The survey, administered by way of personal interviews in respondents' homes, used a series of commonplace tasks of varying difficulty, supplemented by a self-assessment of the literacy skills and needs of Canadians, to provide a detailed literacy profile of the adult population in Canada. This overview presents highlights of the **Alberta** results, focusing on describing the literacy skills and needs of Albertans.

The survey defined literacy as "the information processing skills necessary to use the printed material commonly encountered at work, at home and in the community", thus encompassing reading, writing and numeracy skills. However, only the reading and numeracy components of the survey allowed for generalizations to be made about the broad ability levels of Albertans. Based on their performance on a series of literacy tasks designed to approximate those encountered in everyday life, the reading abilities of respondents were grouped into four levels, ranging from Level 1 at which individuals have virtually no skills in either official language to Level 4 at which people have skills sufficient to meet most everyday reading requirements. Numeracy skills were grouped into three levels of ability ranging from Level 1 at which respondents have very limited ability to Level 3 at which people can meet most everyday numerical demands. [See Appendix A for Statistics Canada's descriptions of the abilities associated with the reading and numeracy levels.]

In identifying those groups most likely to experience literacy problems, the survey has highlighted the areas in which efforts to address the illiteracy problem can best be concentrated. While the survey found that the majority of adult Albertans have literacy skills sufficient to meet most everyday demands, as expected, certain groups within Alberta (e.g., older Albertans, those with low levels of educational attainment, immigrants, etc.) have a greater likelihood of having poor skill levels. The literacy survey represents the first attempt to directly estimate the magnitude of the illiteracy problem in Alberta and the degree of the differences in abilities between groups. As such, it is hoped that the results of this survey will aid educators, service providers, the government, employers and the public in identifying the most effective ways to improve the overall literacy level of Albertans.

Overall, the results indicated that the majority (71%) of adult Albertans have sufficient **reading** skills to meet most everyday demands (Level 4). Another 17% of Albertans can use reading materials in a variety of contexts, provided that the material is simple and clearly laid out (Level 3). Approximately 5% of Albertans have virtually no reading skills in either of Canada's official languages (Level 1), and another 7% have very limited skills such as the ability to recognize a familiar word in a simple text (Level 2). These results compare favorably to those for all of Canada, which indicate that only 62% of adult Canadians have reading skills adequate to meet most everyday requirements.

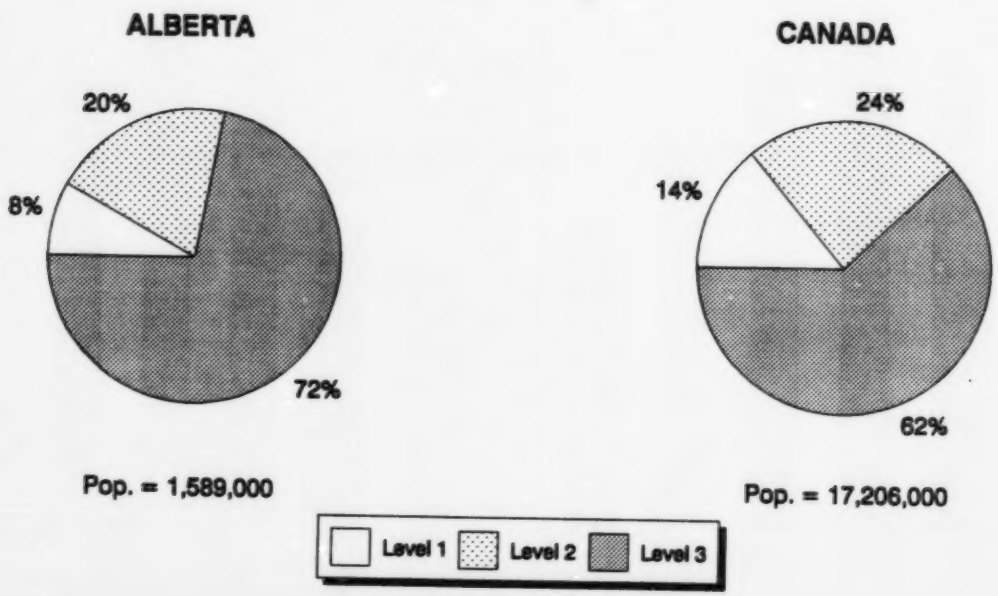
PERCENTAGE DISTRIBUTION OF PERSONS AGED 16-69 YEARS BY READING LEVEL



Notes: 1. Persons who reported having no skills in either of Canada's official languages are included in Level 1.
2. The 4.5% of Albertans at Level 1 was reported as 4% in a Statistics Canada data release on Reading Skills. Statistics Canada confirmed that this estimate should be rounded to 5%, not 4%.

As with reading skills, Albertans also compare favorably to all Canadians in terms of their numeracy skills. An estimated 72% of Albertans aged 16-69 years have **numeracy** skills sufficient to deal with most everyday requirements (Level 3). Another 20% of Albertans are limited to some extent in their numerical abilities, being able to perform only simple operations such as addition or subtraction (Level 2). Finally, an estimated 8% of adults in Alberta have very limited numeracy abilities. The skills of this latter group would enable them to, at most, locate and recognize numbers in isolation or in a short text.

PERCENTAGE DISTRIBUTION OF PERSONS AGED 16-69 YEARS BY NUMERACY LEVEL

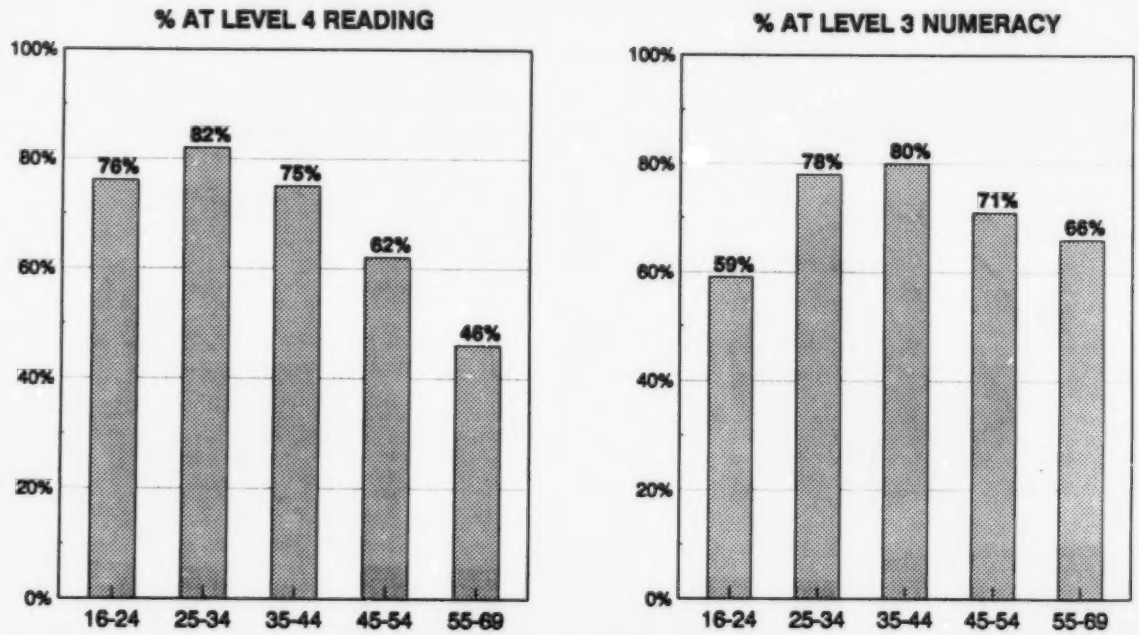


Notes: 1. Excludes persons who reported having no skills in either of Canada's official languages and persons whose reading skills were too limited to undertake the main test items.

2. Statistics Canada rounded the 24.5% of Canadians at Level 2 to 24%, rather than 25% as in normal rounding, so that the total adds to 100%.

In general, literacy levels have improved with succeeding generations of Albertans. Those aged 25-34 years (82%) are almost twice as likely as 55-69 year olds (46%) to have reading skills that are sufficient to meet most everyday demands. Numeracy skills also tend to be slightly higher among younger age groups, with the exception of 16-24 year olds, among whom only 59% had a level of numeracy skill adequate to deal with most everyday requirements. It is not clear whether the poor performance of this age group on the numeracy tasks stems from an inability to perform the calculations or a relative unfamiliarity with the context of the numeracy tasks commonly encountered in adult life.

LITERACY LEVEL OF ALBERTANS BY AGE GROUP

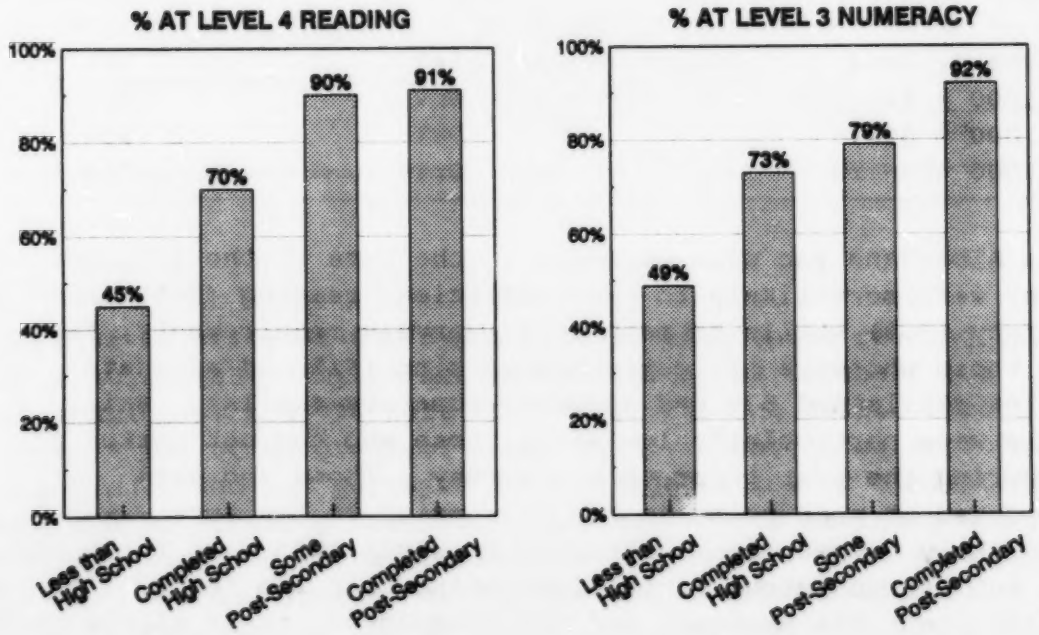


As would be expected, given the relative unfamiliarity initially of many immigrants with either of Canada's official languages, immigrants were less likely (54%) than Canadian born (75%) Albertans to have reading skills adequate to meet most everyday requirements. Immigrants were also found to be somewhat less likely (62%) than Canadian born persons (74%) to have numeracy skills sufficient to meet most commonplace demands, perhaps due to the nature of the tasks, which involved numerical operations imbedded within the type of documents and forms encountered in everyday life in Canada.

Albertans who had experienced health problems or disabilities that could affect learning also had a lesser likelihood of being at the highest level of reading literacy and numeracy ability. Less than two-thirds of this group were at the highest level of reading and numeracy skill, as compared to almost three-quarters of those who indicated that they had never experienced such problems.

As one would expect, educational attainment was strongly associated with the literacy skills of Albertans. Only 45% of those who had not graduated from high school had reading skills adequate to meet most everyday demands, as compared to 70% of high school graduates, and 90% and 91% respectively, of those who had some post-secondary education or had completed a post-secondary program. Similar results were found with numeracy ability. Clearly, graduation from high school appears to mark a turning point at which the likelihood of illiteracy is greatly lessened.

LITERACY LEVEL OF ALBERTANS BY EDUCATIONAL ATTAINMENT



The literacy level of Albertans, in particular reading skills, was also related to parents' education. While the influence of fathers' education on the skills of respondents showed a continuous positive association, the influence of mothers' education turned on whether or not one's mother had completed high school. Only two-thirds (66%) of Albertans whose mothers were not high school graduates had reading skills sufficient to meet most everyday demands, as compared to 84-85% among those whose mothers had attained a high school diploma or more.

Not surprisingly, given the link between education, employment status and income, lower income Albertans are more likely to experience literacy problems than are higher income Albertans. While 83% of those with annual personal incomes of $30,000 or more have reading skills sufficient to meet most everyday demands, only 64% of those earning less than $10,000 have skills at this level. Similarly, 86% of those who earn $30,000 or more are at the highest level of numeracy ability, as compared to only 58% of those with personal incomes of less than $10,000.

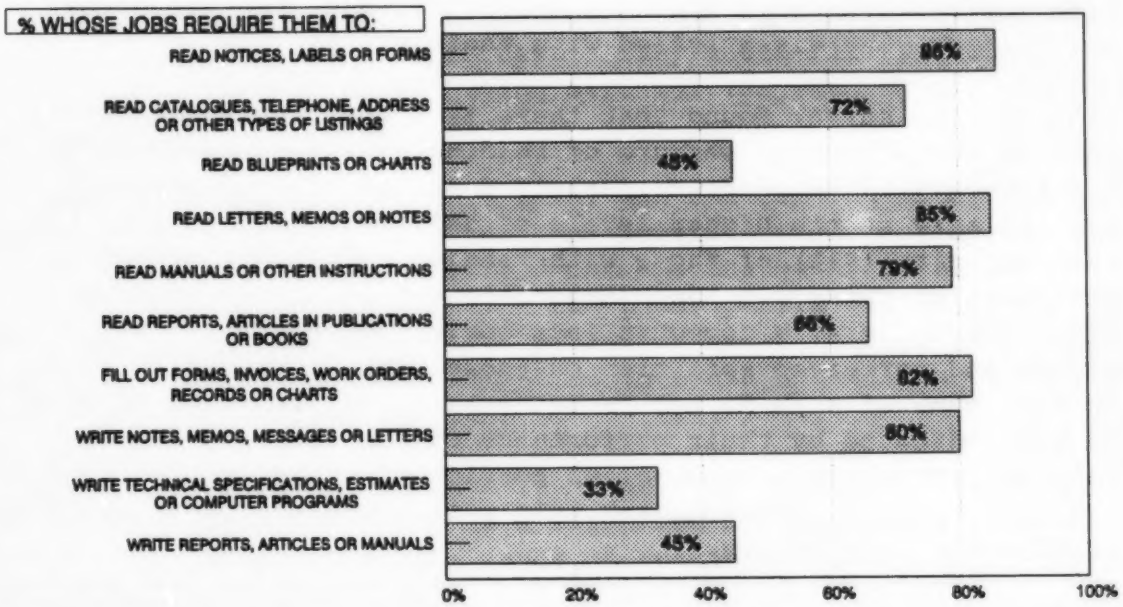
LITERACY LEVEL BY PERSONAL INCOME FROM ALL SOURCES

Income Before Deductions	% at Level 4 Reading	% at Level 3 Numeracy
$9,999 or Less	64%	58%
$10,000 - $19,999	65%	65%
$20,000 - $29,999	78%	82%
$30,000 or More	83%	86%

Those Albertans who were employed at the time of the literacy survey were more likely to have sufficient reading (74%) and numeracy (76%) skills to meet most everyday requirements, than were those who were not currently working (61% had adequate reading skills and 57% had adequate numeracy skills). Skill levels were particularly low among those who had not worked at all during the year prior to the survey. Those who were unemployed at some point in the year prior to the survey were less likely to experience literacy problems than were those who were out of the labour force, indicating that the labour force as a whole, both the employed and the unemployed, has a higher level of literacy than those out of the labour force.

Response to questions about the reading and writing requirements encountered at work suggest that the vast majority of all jobs require individuals who have, at minimum, basic reading and writing skills. For example, 85% of the employed indicated that their jobs required them to read letters, memos or notes, and 80% are required to write notes, memos, messages or letters.

READING AND WRITING REQUIREMENTS OF EMPLOYMENT*



* Job requirements pertain to the current or most recent job held by persons who were employed at the time of the survey or within the past year.

The vast majority of the employed felt that their reading (88%) and writing (85%) skills are not a limitation to their job opportunities, and 93% felt that their reading skills were adequate for other areas of their life. Among those employed respondents who did perceive skill inadequacies or limitations, job-related literacy training, specialized job training and programs that aid in the pursuit of formal education were seen as the most useful types of training. Those who viewed basic literacy programs as useful preferred that they be taught by an instructor from a local school or community college.

On a scale of 1 to 5, with 1 being poor and 5 being excellent, the majority (68%) of Albertans rated their own reading and writing skills in English as good to excellent (4 or 5 on the scale). Another 25% of Albertans gave their skills a neutral rating (3 on the scale), and only 7% considered their skills to be poor (1 or 2 on the scale).

Given that the majority of Albertans assessed their own skills positively, it is not surprising to find that 63% of Albertans are very satisfied with their reading and writing skills in English. Another 26% indicated that they are somewhat satisfied with their skills, and only 11% indicated that they are either somewhat or very dissatisfied with their skills.

Finally, the survey found that there is a positive relationship between the objective measure of reading skills as assessed by the literacy tasks, and the perceived skills of respondents, particularly at the higher levels of ability. For example, the vast majority (81%) of those with reading skills sufficient to meet most everyday demands rated their own skills as good to excellent. There is somewhat less correspondence among the actual and perceived abilities of those with lower skill levels, in that many of them do not perceive their skills to be as poor as was indicated by their performance on the literacy tasks. This suggests that a substantial portion of those with serious literacy problems may not seek help with their skills in the form of literacy programming.

APPENDIX A

DESCRIPTION OF THE READING AND NUMERACY LEVELS

READING LEVELS (1-4)	
Level 1:	Canadians at this level have difficulty dealing with printed materials. They most likely identify themselves as people who cannot read.
Level 2:	Canadians at this level can use printed materials only for limited purposes such as finding a familiar word in a simple text. They would likely recognize themselves as having difficulties with common reading materials.
Level 3:	Canadians at this level can use reading materials in a variety of situations provided the material is simple, clearly laid out and the tasks involved are not too complex. While these people generally do not see themselves as having major reading difficulties, they tend to avoid situations requiring reading.
Level 4:	Canadians at this level meet most everyday reading demands. This is a large and diverse group which exhibits a wide range of reading skills.

NUMERACY LEVELS (1-3)	
Level 1:	Canadians at this level have very limited numeracy abilities which enable them to, at most, locate and recognize numbers in isolation or in a short text.
Level 2:	Canadians at this level can deal with material requiring them to perform a simple numerical operation such as an addition or subtraction.
Level 3:	Canadians at this level can deal with material requiring them to perform simple sequences of numerical operations which enable them to meet everyday demands.

APPENDIX B

LITERACY SURVEY RESPONSE RATE AND PRODUCTION OF THE POPULATION ESTIMATES

	Selected Sample Size	Number of Respondents	Response Rate
Alberta	**1,248**	**862**	**69%**
Canada	13,571	9,455	70%

The selected sample size for Alberta was augmented by the provision of additional funding by Alberta Advanced Education. As can be seen from the above, 862 Albertans out of the selected sample of 1,248 responded to the survey. The response rate of 69% in Alberta is comparable to the response rate of 70% that was achieved nationally. An analysis of non-respondents by age and education, conducted by Statistics Canada, indicated that there was no apparent concentration of non-response in any particular age group or among individuals with a particular level of educational attainment. In other words, the pattern of non-response appears to be randomly distributed, meaning that the responding sample is not biased, at least in terms of age and educational attainment.

Since the results obtained from the responding sample are used to produce estimates that refer to the population, weights must be applied to each record in order to produce results that are representative of the population. The weights take into account the different probabilities of sample selection and correct for the rate of non-response by stratum. The use of the weights allows us to produce survey estimates from our sample that closely approximate the results that would be found among the entire population from which the sample was drawn. All the estimates produced in the present report meet Statistics Canada's guidelines for the release of estimates.

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SURVEY OF LITERACY SKILLS USED IN DAILY ACTIVITIES

A Report on the Literacy Skills of Albertans

May 1991

Alberta
ADVANCED EDUCATION
Research and Information
Support Branch

EXECUTIVE SUMMARY

In October of 1989, Statistics Canada conducted the Survey of Literacy Skills Used in Daily Activities (LSUDA) in order to directly assess the functional literacy skills of Canadians aged 16-69 years. Using a series of commonplace tasks of varying difficulty, supplemented by a self-assessment of the literacy skills and needs of Canadians, the survey provided a detailed literacy profile of the adult population in Canada. The present report focuses on describing the literacy skills and needs of Albertans, and on explicating the relationship between literacy and other socio-economic indicators within Alberta.

The survey defined literacy as "the information processing skills necessary to use the printed material commonly encountered at work, at home and in the community", thus encompassing reading, writing and numeracy skills. However, only the reading and numeracy components of the survey allowed for generalizations to be made about the broad ability levels of Albertans. Reading abilities were grouped into four levels, ranging from Level 1 at which individuals have virtually no skills in either official language to Level 4 at which people have skills sufficient to meet most everyday reading requirements. Numeracy skills were grouped into three levels of ability ranging from Level 1 at which respondents have very limited ability to Level 3 at which people can meet most everyday numerical demands. The following are highlights of the Alberta results:

- The majority (71%) of adult Albertans have sufficient **reading** skills to meet most everyday demands (Level 4). Another 17% of Albertans can use reading materials in a variety of contexts, provided that the material is simple and clearly laid out (Level 3). Approximately 5% of Albertans have virtually no reading skills in either of Canada's official languages (Level 1), and another 7% have very limited skills such as the ability to recognize a familiar word in a simple text (Level 2).

- An estimated 72% of Albertans aged 16-69 years have **numeracy** skills sufficient to deal with most everyday requirements (Level 3). Another 20% of Albertans are limited to some extent in their numerical abilities, being able to perform only simple operations such as addition or subtraction (Level 2). Finally,

an estimated 8% of adults in Alberta have very limited numeracy abilities. The skills of this latter group would enable them to, at most, locate and recognize numbers in isolation or in a short text.

- In general, literacy levels have improved with succeeding generations of Albertans. Those aged 25-34 years (82%) are almost twice as likely as 55-69 year olds (46%) to have reading skills that are sufficient to meet most everyday demands. Numeracy skills also tend to be slightly higher among younger age groups, with the exception of 16-24 year olds, among whom only 59% had a level of numeracy skill adequate to deal with most everyday requirements. It is not clear whether the poor performance of this age group stems from an inability to perform the calculations or a relative unfamiliarity with the context of the numeracy tasks commonly encountered in adult life.

- As would be expected, given the relative unfamiliarity initially of many immigrants with either of Canada's official languages, immigrants were less likely (54%) than Canadian born (75%) Albertans to have reading skills adequate to meet most everyday requirements. Immigrants were also found to be somewhat less likely (62%) than Canadian born persons (74%) to have numeracy skills sufficient to meet most commonplace demands, perhaps due to the nature of the tasks, which involved numerical operations imbedded within the type of documents and forms encountered in everyday life in Canada.

- Albertans who had experienced health problems or disabilities that could affect learning had a lesser likelihood of being at the highest level of reading literacy and numeracy ability. Less than two-thirds of this group were at the highest level of reading and numeracy skill, as compared to almost three-quarters of those who indicated that they had never experienced such problems.

- As one would expect, educational attainment was strongly associated with the literacy skills of Albertans. Only 45% of those who had not graduated from high school had reading skills adequate to meet most everyday demands, as compared to 70% of high school graduates, and 90% and 91% respectively, of those who had some post-secondary education or had completed a post-

secondary program. Similar results were found with numeracy ability. Clearly, graduation from high school appears to mark a turning point at which the likelihood of illiteracy is greatly lessened.

- The literacy level of Albertans, in particular reading skills, was also related to parents' education. While the influence of fathers' education on the skills of respondents showed a continuous positive association, the influence of mothers' education turned on whether or not one's mother had completed high school. Only two-thirds (66%) of Albertans whose mothers were not high school graduates had reading skills sufficient to meet most everyday demands, as compared to 84-85% among those whose mothers had attained a high school diploma or more.

- Not surprisingly, given the link between education, employment status and income, lower income Albertans are more likely to experience literacy problems than are higher income Albertans. While 83% of those with annual personal incomes of $30,000 or more have reading skills sufficient to meet most everyday demands, only 64% of those earning less than $10,000 have skills at this level. Similarly, 86% of those who earn $30,000 or more are at the highest level of numeracy ability, as compared to only 58% of those with personal incomes of less than $10,000.

- Those Albertans who were employed at the time of the literacy survey were more likely to have sufficient reading (74%) and numeracy (76%) skills to meet most everyday requirements, than were those who were not currently working (61% had adequate reading skills and 57% had adequate numeracy skills). Skill levels were particularly low among those who had not worked at all during the year prior to the survey. Those who were unemployed at some point in the year prior to the survey were less likely to experience literacy problems than were those who were out of the labour force, indicating that the labour force as a whole, both the employed and the unemployed, has a higher level of literacy than those out of the labour force.

- Response to questions about the reading and writing requirements encountered at work suggest that the vast majority of all jobs require individuals who have, at minimum, basic reading and writing skills. For example, 85% of the employed

indicated that their jobs required them to read letters, memos or notes, and 80% are required to write notes, memos, messages or letters.

- The vast majority of the employed felt that their reading (88%) and writing (85%) skills are not a limitation to their job opportunities, and 93% felt that their reading skills were adequate for other areas of their life. Among those employed respondents who did perceive skill inadequacies or limitations, job-related literacy training, specialized job training and programs that aid in the pursuit of formal education were seen as the most useful types of training. Those who viewed basic literacy programs as useful preferred that they be taught by an instructor from a local school or community college.

- On a scale of 1 to 5, with 1 being poor and 5 being excellent, the majority (68%) of Albertans rated their own reading and writing skills in English as good to excellent (4 or 5 on the scale). Another 25% of Albertans gave their skills a neutral rating (3 on the scale), and only 7% considered their skills to be poor (1 or 2 on the scale).

- Given that the majority of Albertans assessed their own skills positively, it is not surprising to find that 63% of Albertans are very satisfied with their reading and writing skills in English. Another 26% indicated that they are somewhat satisfied with their skills, and only 11% indicated that they are either somewhat or very dissatisfied with their skills.

- Finally, the survey found that there is a positive relationship between the objective measure of reading skills as assessed by the literacy tasks, and the perceived skills of respondents, particularly at the higher levels of ability. For example, the vast majority (81%) of those with reading skills sufficient to meet most everyday demands rated their own skills as good to excellent. There is somewhat less correspondence among the actual and perceived abilities of those with lower skill levels, in that many of them do not perceive their skills to be as poor as was indicated by their performance on the literacy tasks. This suggests that a substantial portion of those with serious literacy problems may not seek help with their skills in the form of literacy programming.

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I. OVERVIEW

In October of 1989, Statistics Canada conducted the National Survey of Literacy Skills Used in Daily Activities (LSUDA). The study was commissioned by the National Literacy Secretariat of the Department of the Secretary of State. The main objective of the survey was the development of a detailed literacy profile of the Canadian population aged 16-69 years. This profile centered on the direct assessment of the functional literacy skills of adult Canadians using a series of commonplace tasks of varying difficulty. In addition to a direct assessment of literacy in either official language, the survey also included a self-assessment of the literacy skills and needs of Canadians. These elements were further supplemented by the collection of information on standard demographic and background characteristics in order to facilitate the analysis of the link between literacy and other socio-economic indicators.

For the purpose of the survey, Statistics Canada defined literacy as follows:

> **"The information processing skills necessary to use the printed material commonly encountered at work, at home and in the community."**

This definition encompasses reading, writing and numeracy skills. Due to the priorities of the survey, the writing component did not allow for any generalizations to be made about the directly assessed writing ability of Canadians. However, the survey results did allow for the reading and numeracy skills of Canadians to be grouped into broad ability levels which correspond to points along a continuum of literacy. These levels and the corresponding abilities associated with them are described in the research methodology section of the report.

The analysis presented in this report focuses on describing the literacy skills and needs of **Albertans**, and on explicating the relationship between literacy and other socio-economic indicators within Alberta. Overall, the survey found that the majority of adult Albertans have literacy skills sufficient to meet most everyday demands. Furthermore, the incidence of illiteracy in Alberta is somewhat less than in Canada as a whole. However, the results indicate that certain groups within Alberta (eg., older

Albertans, those with low levels of educational attainment, immigrants, etc.) have a greater likelihood of having poor skill levels. In highlighting the areas in which literacy problems are concentrated, it is hoped that the results of this survey will aid both policy makers and service providers in identifying the most effective approaches to improving the overall level of literacy in Alberta.

II. RESEARCH METHODOLOGY

Following a feasibility study to examine the concepts and definitions underlying literacy and its measurement within a household survey framework, and a pilot survey to test the methodology and measurement tools, the National Survey of Literacy Skills Used in Daily Activities (LSUDA) was conducted in October of 1989. The LSUDA was administered to a sub-sample of former Labour Force Survey (LFS) respondents. As such, its sample design is closely tied to that of the LFS, which is based upon a stratified, multi-stage probability sampling design. The LFS sample consists of approximately 48,000 households and is considered to be representative of the civilian, non-institutionalized population aged 15 years and older in Canada's ten provinces.[1]

For the Survey of Literacy Skills Used in Daily Activities, a representative sample of 13,571 Canadians aged 16-69 years was selected from the April 1989 Labour Force File. Information obtained from the LFS was used to tailor the sample to meet the specific requirements of the literacy survey, in particular, the desire to oversample young adults and persons with low educational attainment. Only one person within a household was selected for the literacy survey, and in order to minimize the amount of tracing required due to address change, the literacy survey sample was selected from respondents who were in the LFS sample no longer than six months prior to the time of the literacy survey.

Table 1 shows the selected sample sizes and response rates for Alberta and Canada.

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[1] The Labour Force Survey excludes residents of the Yukon and Northwest Territories, persons living on Indian Reserves, full-time members of the Canadian Armed Forces and inmates of institutions. Together, these groups account for approximately 3% of the Canadian population aged 15 years or older.

TABLE 1

LITERACY SURVEY RESPONSE RATE

	Selected Sample Size	Number of Respondents	Response Rate
Alberta	**1,248**	**862**	**69%**
Canada	13,571	9,455	70%

The selected sample size for Alberta was augmented by the provision of additional funding by Alberta Advanced Education.[2] As can be seen from the above, 862 Albertans out of the selected sample of 1,248 responded to the survey. The response rate of 69% in Alberta is comparable to the response rate of 70% that was achieved nationally. An analysis of non-respondents by age and education, conducted by Statistics Canada, indicated that there was no apparent concentration of non-response in any particular age group or among individuals with a particular level of educational attainment. In other words, the pattern of non-response appears to be randomly distributed, meaning that the responding sample is not biased, at least in terms of age and educational attainment.

Since the results obtained from the responding sample are used to produce estimates that refer to the population, weights must be applied to each record in order to produce results that are representative of the population. The weights take into account the different probabilities of sample selection and correct for the rate of non-response by stratum. The use of the weights allows us to produce survey estimates from our sample that closely approximate the results that would be found among the entire population from which the sample was drawn. All the estimates produced in the present report meet Statistics Canada's guidelines for the release of estimates, unless otherwise noted in the text.

Data for the literacy survey were collected in October 1989 by way of personal interviews conducted in the respondents' homes.

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[2] Newfoundland, New Brunswick and Ontario also provided additional funding to increase the selected sample size in their respective provinces.

The survey consisted of two main elements: a background questionnaire; and, a series of tasks that were designed to directly measure literacy skills. In addition, a number of variables from the Labour Force Survey (eg., industry and occupation) were appended to the data file. Respondents had their choice of completing the background questionnaire and the literacy tasks in either of Canada's official languages. (Virtually all Alberta respondents completed the literacy tasks in English). Interviewers were trained not to assume that the tasks would be completed in the same language as the background interview. If an individual was unable to communicate with the interviewer in either English or French, an interpreter was used to set up an appointment to administer the background questionnaire. These respondents were then requested to attempt the literacy tasks without the aid of the interpreter.

The background questionnaire collected information on a number of social and demographic characteristics that are thought to be related to literacy. In addition, the background questionnaire collected information on the respondents' self-evaluations of their literacy abilities and needs, with particular reference to the perceived adequacy of their skills in three contexts: at work, in job search, and in activities outside of the labour force.

The second component of the survey, the tasks designed to directly assess literacy skills, consisted of 44 specific items designed to simulate the type of tasks that are commonly encountered in daily life (eg., reading a medicine label, calculating the price of grocery items, filling out a deposit slip, etc.). They included seven core tasks designed to identify respondents with very limited skills, and 37 main tasks that were more diverse in complexity and subject matter. These latter items were designed to provide an understanding of the literacy abilities of the adult population in Canada.

Due to the priorities of the survey and the time required for its administration, the number and kind of test items that were included was limited. The measurement of reading was given precedence over both writing and numeracy skill. The measurement of writing was particularly limited, and as such, did not allow for generalizations to be made about the writing skills of Canadians. In addition, the survey also gave precedence to the

measurement of skills at the middle and lower levels, in an attempt to more precisely describe the range of abilities found among those persons experiencing problems in dealing with everyday literacy requirements. Finally, the direct assessment of literacy through simulated tasks was limited to one of Canada's official languages.

The survey measures of reading and numeracy skill allowed individuals to be assigned a score from 0-500, using Item Response Theory (IRT), which is an approach to measurement that defines individual ability in terms of the difficulty of the test items that one can perform.[3] Using statistical procedures, these scores were grouped into broad ability levels that reflect distinct points along the functional literacy continuum. These points on the continuum were identified prior to the analysis of the survey results and are thought to reflect significant differences in literacy abilities. It is hoped that the description of Canadians in terms of these broad ability levels will aid policy makers and service providers in identifying the types of literacy programs needed and their respective clienteles.

The following are Statistics Canada's descriptions of the reading and numeracy skills associated with each level of ability as defined by the survey. The descriptions reflect the view that functional literacy skills do not fall neatly into categories, but rather form a continuum of ability, with the levels simply identifying distinct points along the continuum. The level of ability to which an individual is assigned reflects the highest level at which he or she can perform consistently.

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[3] For a detailed technical description of the methodology used to score the test results and assign respondents into literacy levels see Stan Jones, Guide to Literacy Levels on the Survey of Literacy Skills Used in Daily Activities, May 1990.

READING LEVELS (1-4)	
Level 1:	Canadians at this level have difficulty dealing with printed materials. They most likely identify themselves as people who cannot read.
Level 2:	Canadians at this level can use printed materials only for limited purposes such as finding a familiar word in a simple text. They would likely recognize themselves as having difficulties with common reading materials.
Level 3:	Canadians at this level can use reading materials in a variety of situations provided the material is simple, clearly laid out and the tasks involved are not too complex. While these people generally do not see themselves as having major reading difficulties, they tend to avoid situations requiring reading.
Level 4:	Canadians at this level meet most everyday reading demands. This is a large and diverse group which exhibits a wide range of reading skills.

The reading levels actually measure two distinct types of ability: the ability to decode the written symbols that comprise a text (basic competency); and, the ability to apply the information gained to make a judgement or decision (cognitive skills). Statistics Canada was also able to divide the wide range of abilities found in Level 4 Reading into two sublevels. Although this distinction was not originally intended, Statistics Canada found that the results to the three most difficult reading items clustered together. That is, respondents who completed one of the three tasks correctly were likely to complete all of them correctly. Similarly, respondents who could not complete one of the three were unlikely to be able to complete any. The characteristic which appears to distinguish high level 4 from low level 4 is the ability to make some judgement about what was read. However, because the measurement of high level 4 is based on so few items, the low-high level 4 distinction is much less precise than that between the four reading levels.

NUMERACY LEVELS (1-3)	
Level 1:	Canadians at this level have very limited numeracy abilities which enable them to, at most, locate and recognize numbers in isolation or in a short text.
Level 2:	Canadians at this level can deal with material requiring them to perform a simple numerical operation such as an addition or subtraction.
Level 3:	Canadians at this level can deal with material requiring them to perform simple sequences of numerical operations which enable them to meet everyday demands.

Statistics Canada indicates that "the numeracy skills measured reflect not only the ability to perform numeric operations but also the ability to achieve them within the context of everyday tasks requiring the use of documents and forms." In other words, the numeracy levels reflect the ability to perform numerical operations in the context of commonly encountered materials (eg., order form, bank deposit slip) that generally involve at least a minimum amount of reading.

These pre-defined levels of ability, combined with three domains of application (home, work and community) provided the context in which literacy skills used in daily activities were assessed.

III. DIRECT ASSESSMENT OF LITERACY SKILLS

Past research in the area of literacy has traditionally relied on crude and arbitrary measures. The percentage of adults with less than a Grade 9 education was often used as an indicator of functional illiteracy. Yet, Statistics Canada rightly notes that the use of such arbitrary measures does not recognize factors such as differences between educational systems and the gains that can be realized through self-education and life experience.[4] Fortunately, the movement in more recent research has been towards the direct measurement of literacy. Such an approach assesses functional literacy by one's ability to correctly answer questions or perform tasks related to the use of texts of the type that would be encountered in daily life.

The present survey is a continuation of this line of research, aimed at directly assessing the literacy skills of Canadians and presenting the results in a form that can be practically understood. In developing the Survey of Literacy Skills Used in Daily Activities, Statistics Canada built upon the experiences of two prior studies: the National Assessment of Educational Progress (NAEP), which studied America's young adults (aged 21-25) and provided the largest pool of literacy assessment instruments currently available; and, the Southam Survey which attempted to provide the first national assessment of the literacy problem in Canada. This section of our report examines the literacy skills of Albertans as identified by the direct assessment component of Statistics Canada's Survey of Literacy Skills Used in Daily Activities (LSUDA).

A. Overall Literacy Level of Albertans

The survey results indicated that the majority of adult Albertans have sufficient reading and numeracy abilities to deal with most everyday demands.

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[4] Statistics Canada. Survey of Literacy Skills Used in Daily Activities: An Information Document on a National Survey by Statistics Canada. Special Surveys Group, December 1989.

1. Reading

Of the approximately 1,649,000 Albertans aged 16-69 years in 1989, it is estimated that 71% are at Level 4 on the continuum of reading literacy.[5] In other words, the majority of adult Albertans have reading abilities which allow them to handle most commonly encountered reading requirements. Another 17% of Albertans are limited to some degree in their functional reading abilities, in that they are constrained to material that is quite simple and clearly laid out (Level 3). The remainder of Albertans would be considered illiterate by most standards, having virtually no reading skills (5% at Level 1) or very limited skills such as the ability to recognize a familiar word in a simple text (7% at Level 2). The very minute proportion[6] of Albertans who reported having no skills in either of Canada's official languages are included in the percentage of Albertans at Level 1. As Statistics Canada states: "Rather than a reflection of ethnocentricity, this reflects the view that an absence of official language literacy effectively deprives a segment of the population from the benefit of government initiatives based on the written word, be they in health promotion, labour market adjustment or any other area of activity."

Since the priority of the survey was to identify persons who were limited in terms of dealing with everyday reading demands, that is, persons at the lower and middle

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[5] All estimates reported throughout the paper have been checked with Statistics Canada's guidelines for release and are considered to be reliable unless otherwise noted in the text. When estimates are followed by a cautionary note indicating a high degree of sampling variability, the estimate falls within Statistics Canada's qualified guidelines for release. This means that although the estimate is still reasonably reliable in terms of approximating the population figure, due to the small sample size on which it is based, it may vary somewhat more from the actual population figure than would an unqualified estimate, and as such, should be interpreted with caution.

[6] Due to high sampling variability, the exact figure cannot be released according to Statistics Canada's guidelines.

levels of ability (Level 1-3), the remaining group (Level 4) is very large and diverse. While all persons at Level 4 have, at minimum, the capability to deal with most basic reading requirements in everyday life, measurement of the range of skill beyond that point was not within the scope of the survey. However, the survey did make a distinction between low and high Level 4 readers (as discussed in the Research Methodology section). Among those Albertans who are at Level 4 Reading, only one-third (32%) are considered to be in the high (more skilled) subgroup of this level. The remaining 68% of Albertans at Level 4 are in the lower subgroup.[7] Since the distinguishing feature of the high Level 4 category appears to be the ability to make some judgement about what was read, this result suggests that even among persons who are considered to be functionally literate in terms of dealing with everyday demands, there may be a lack of higher-order reading skills. Unfortunately, the measurement of the low-high Level 4 distinction is not as precise as is the measure of the four reading levels. As such, Statistics Canada cautions against placing too much emphasis on this result.

Alberta's adult population compares favorably with that of Canada as a whole, in terms of its reading skills. As can be seen from Figure 1, only 62% of the Canadian population is estimated to be at Level 4 Reading, as compared to 71% in Alberta. The reason for this difference in overall reading skills may be the result of a number of factors such as differences in patterns of immigration, differing participation rates in higher education (Alberta's is among the highest), and differences in educational systems across Canada. In Alberta, our post-secondary educational system offers an extremely diverse range of programs including a number aimed at improving basic literacy skills (eg., academic upgrading, ESL, job-readiness, etc.).

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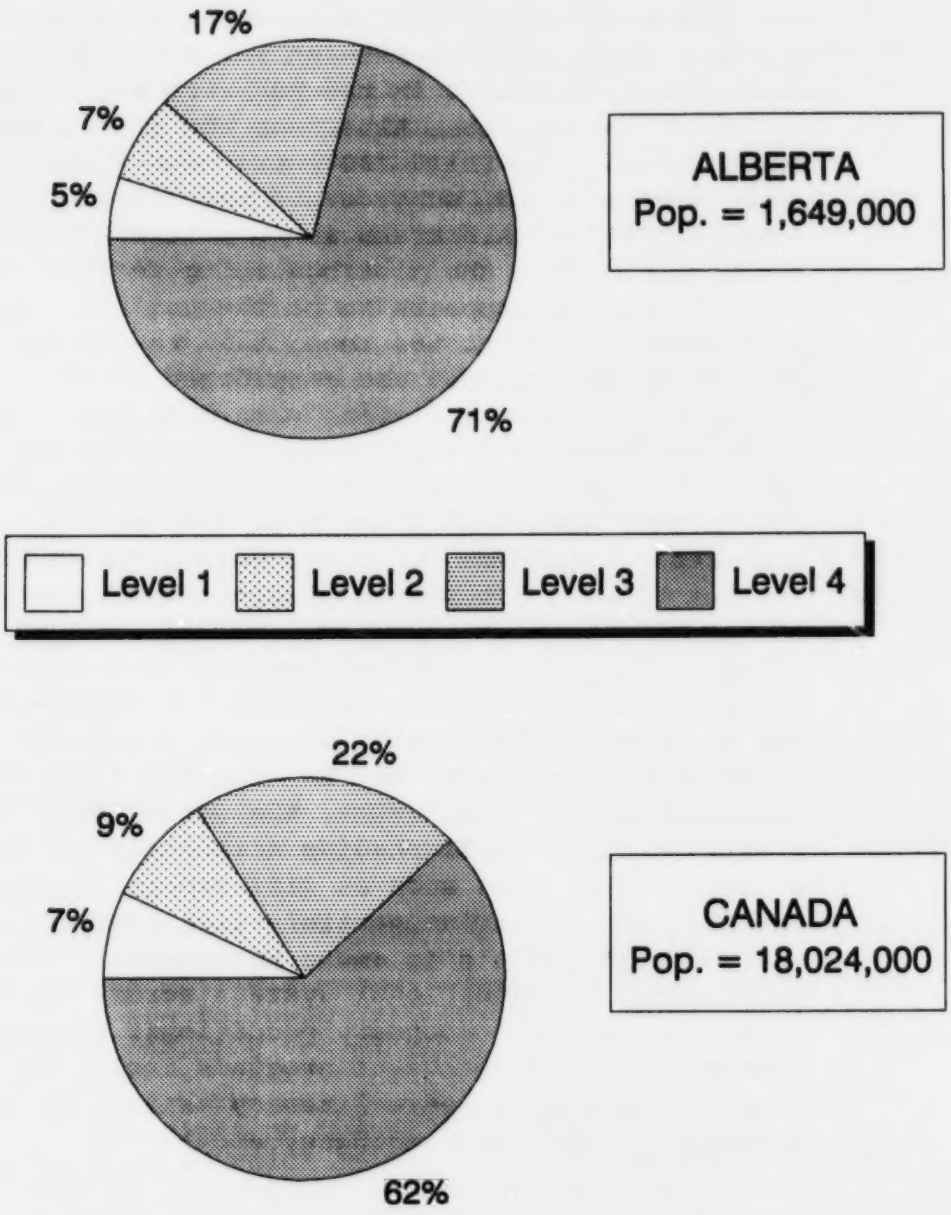
[7] Alberta has a higher percentage of persons in the high Level 4 subgroup than does Canada as a whole. Among those Canadians who are at Level 4 Reading, one-quarter (26%) are at high Level 4 and 74% are at low Level 4.

FIGURE 1

PERCENTAGE DISTRIBUTION OF PERSONS AGED 16-69 YEARS BY READING LEVEL



Notes: 1. Persons who reported having no skills in either of Canada's official languages are included in Level 1.

2. The 4.5% of Albertans at Level 1 was reported as 4% in a Statistics Canada data release on Reading Skills. Statistics Canada confirmed that this estimate should be rounded to 5%, not 4%.

2. Numeracy[8]

An estimated 72% of Alberta's adult population aged 16-69 years have numeracy skills sufficient to deal with most everyday requirements (Level 3). Persons at this level of ability can perform simple sequences of numerical operations that allow them to deal with the demands of most documents and forms that would be encountered in daily life. Another 20% of adult Albertans are limited to some extent in dealing with everyday numeracy demands (Level 2). While this group does not have sufficient skills to meet all everyday requirements, it can perform simple numerical operations such as addition or subtraction. Finally, an estimated 8% of adults in Alberta have very limited numeracy abilities (Level 1). These persons can, at most, locate and recognize numbers in isolation or in a short text.

As with reading skills, the numerical skills of Albertans compare favorably to those of Canadians as a whole. As can be seen from Figure 2, the 72% of Albertans with sufficient skills to meet most everyday numeracy requirements compares to only 62% in all of Canada. The percentage of Canadians with virtually no numeracy skills is almost twice that of Alberta (14% in Canada as a whole as compared to only 8% in Alberta).

Reading and numeracy, as directly assessed by the literacy tasks, show a high positive (+.70) correlation with one another.[9] This means that Albertans with higher level skills on one dimension of literacy tend to have high skills on the other dimension. Correspondingly, low skills on one dimension of literacy tend to be associated with low skills on the other. To cite an example, 87% of Albertans at the

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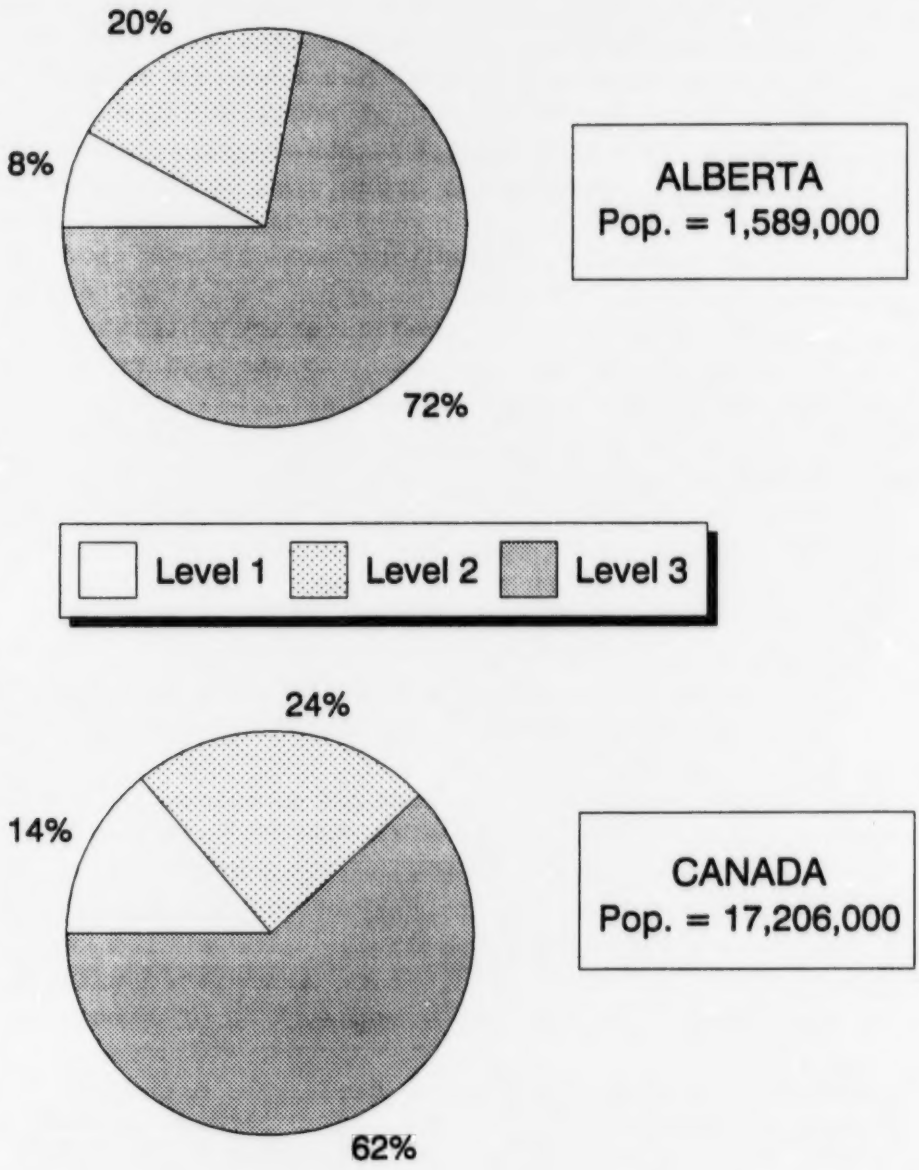
[8] Persons who reported having no skills in either of Canada's official languages and persons whose reading skills were too limited to undertake the main test items were excluded from the analysis of numeracy skills. Their inability to understand the numeracy task instructions means that the survey, as designed, has no way of assessing the numeracy skills of this group.

[9] Two items that are perfectly correlated with one another would have a correlation coefficient of 1.

FIGURE 2

PERCENTAGE DISTRIBUTION OF PERSONS AGED 16-69 YEARS BY NUMERACY LEVEL



Notes: 1. Excludes persons who reported having no skills in either of Canada's official languages and persons whose reading skills were too limited to undertake the main test items.

2. Statistics Canada rounded the 24.5% of Canadians at Level 2 to 24%, rather than 25% as in normal rounding, so that the total adds to 100%.

highest level of reading skill (Level 4) are also at the highest level of numeracy (Level 3), and 89% of Albertans at the highest level of numeracy are also at the highest level of reading ability. These results confirm the generally accepted view that a lack of basic skills is usually not limited to just one area. In doing so, they also indirectly confirm the validity of the survey's measurement of literacy.

B. Characteristics Associated with Reading and Numeracy Level

It is well known that illiteracy is not a randomly occurring phenomenon. Although persons from all walks of life may be affected by this problem, in general, the occurrence of illiteracy is associated with a number of other factors. If we can identify the major characteristics that are associated with a greater likelihood of illiteracy, then we will be better able to target literacy programming to the groups most at risk. This section explores the relationship between the literacy level of Albertans, as assessed by the test items, and several demographic and individual background characteristics.[10]

Throughout most of the analysis in this section, crosstabulations are used to identify relationships between literacy and other factors. For the purpose of these crosstabulations with other variables, reading and numeracy levels have been collapsed in order to obtain enough cases with which to produce reliable results. Since so few Albertans are in the lowest levels of ability, we cannot, in most cases, produce reliable results when we examine these levels of ability in conjunction with other factors. As such, Reading Levels 1 and 2 (including those with language problems) have been grouped together for the crosstabulations. Although we lose the finer distinctions, this grouping still comprises a meaningful category because

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[10] Unless otherwise indicated, all relationships (eg., the higher one's educational attainment the less likely one is to have low reading skills) described in the report are statistically significant at the $p<.001$ level. However, since the statistical tests are based on the weighted results (which approximate the population size), almost all the relationships are statistically significant. It is a matter of judgement as to what constitutes a substantive relationship.

persons within it are essentially illiterate in terms of reading in Canada's official languages. Numeracy Levels 1 and 2 have also been grouped together for the crosstabulations. Although persons at Level 1 and 2 in the numeracy continuum are substantially different, the grouping is still meaningful in that it identifies persons with numeracy skills that limit them (albeit to different extents) in terms of dealing with everyday numeracy demands.

1. Demographic Characteristics

Although demographic characteristics often are useful in identifying groups more likely to experience literacy difficulties, it must be noted that the relationships between literacy and demographic characteristics are often spurious. That is, the relationship is the result of other factors such as educational levels, which are highly correlated with certain demographic characteristics. Thus, while we can identify demographic characteristics that are associated with literacy level, it must be remembered that these are not simple cause-effect relationships, but are the result of an interplay between a number of factors.

The survey found that reading level was only minimally associated with gender, with females being somewhat less likely to experience literacy problems. This relationship is demonstrated in Table 2.

TABLE 2
READING LEVEL BY GENDER

	Male	Female
Language Problems and Level 1 & 2	13%	10%
Level 3	19%	16%
Level 4	68%	74%

While 74% of females were at **Reading Level 4**, this was the case for only 68% of males. Substantively, there was no real difference in numeracy ability by gender, with 73% of males and 71% of females at **Numeracy Level 3**.

In contrast, age and reading level were strongly related as is shown by Table 3.

TABLE 3
READING LEVEL BY AGE GROUP

	Years of Age				
	16-24	25-34	35-44	45-54	55-69
Language Problems and Level 1 & 2	-	8%*	11%*	16%*	24%*
Level 3	18%*	11%*	14%*	22%*	30%
Level 4	76%	82%	75%	62%	46%

* Figures denoted with an asterisk should be interpreted with caution due to the high sampling variability associated with the small sample size.

\- Not releasable due to high sampling variability.

The crosstabulation of reading literacy level with age indicated that, with the exception of the youngest age group (many of whom may still be in school), the younger the age group, the higher the percentage of Albertans at the highest level of reading literacy (Level 4). While 82% of Albertans aged 25-34 years are at **Reading Level 4**, only 46% of those age 55-69 years at this level of reading literacy. The direction of this finding corresponds to what we would expect, since the level of educational attainment of the population has increased with succeeding generations of Albertans.

A relationship between age and numeracy level was also apparent, however, as can be seen from Table 4, it does not appear to be as strong as the relationship between age and reading ability.

TABLE 4
NUMERACY LEVEL BY AGE GROUP

	Years of Age				
	16-24	25-34	35-44	45-54	55-69
Level 1 & 2	41%	22%	20%	29%	34%
Level 3	59%	78%	80%	71%	66%

While over three-quarters of those age 25-34 years (78%) and 35-44 years (80%) are at **Numeracy Level 3**, only two-thirds of those age 55-69 years (66%) are at this level. However, what is really surprising in the case of numeracy skill, is the fact that only 59% of 16-24 year olds are at Level 3. Although many individuals in this age group may not have completed their formal education, most would have attained at least some secondary school. The fact that 41% of this group have not acquired the numeracy skills necessary to meet most everyday demands would imply that the educational system has not been successful in ensuring that Albertan's possess the applied numerical skills that they need to handle the basic tasks that would be encountered in adult life. However, it is likely that many youth in the 16-24 year old age group are still unfamiliar with the type of numeracy tasks that adults perform in everyday life (eg., deposit slips, order forms, etc.). Certainly, these tasks are different in context from the type of mathematical exercises done in school. The present survey does not allow us to determine the cause of the relatively poor performance of the 16-24 year old age group on the numeracy tasks. Whether the performance of this group is due to an inability to do the numerical calculations, an unfamiliarity with the context of the tasks, or both, is a question for future research.

In terms of the size of one's area of residence, our results are not clear, as can be seen from Table 5. Those who resided in small to mid-size urban areas were the most likely to be at the highest level of reading literacy, however, they were the least likely to be at the highest level of numeracy skill. None of the differences are large.

TABLE 5
LITERACY LEVEL BY SIZE OF AREA OF RESIDENCE

Size of Area of Residence	% at Level 4 Reading	% at Level 3 Numeracy
Urban 500,000 or more	70%	73%
Urban 30,000 - 99,999	75%	65%
Urban 29,999 or less	74%	72%
Rural	69%	71%

2. Background and Personal Characteristics

As with demographic characteristics, individual background and personal characteristics are also related to literacy level. As can be seen from Table 6, immigrants[11] are more likely to experience reading difficulties than are Canadian born respondents, as would be expected given the relative unfamiliarity initially of many immigrants with either of Canada's official languages.

TABLE 6
READING LEVEL BY IMMIGRATION STATUS

	Canadian Born	Immigrant
Language Problems and Level 1 & 2	7%	30%
Level 3	18%	17%*
Level 4	75%	54%

* Figure should be interpreted with caution due to the high sampling variability associated with the small sample size.

Three-quarters of Canadian born respondents were at Level 4 Reading, as compared to slightly over half (54%) of immigrants. Almost one-third (30%) of immigrants were

[11] Among the immigrants to Alberta surveyed, Asia and Oceania (36%) and Northern Europe (21%) were the most common places of origin; 76% had immigrated prior to 1980; and half (50%) had not completed secondary school prior to immigration, but an equal number (49%) had pursued credit educational courses since arriving in Canada.

essentially functionally illiterate in either of Canada's official languages. While one would expect Canadian born respondents to fare better than immigrants, the magnitude of this difference is surprising, given the fact that half (49%) of all immigrants surveyed had pursued credit educational courses since arriving in Canada, and many of them had completed educational programs in Canada.

As can be seen from Table 7, immigrants were also more likely than Canadian born respondents to have poor numeracy skills.

TABLE 7
NUMERACY LEVEL BY IMMIGRATION STATUS

	Canadian Born	Immigrant
Level 1 & 2	26%	38%
Level 3	74%	62%

While 74% of Canadian born respondents were at **Numeracy Level 3**, only 62% of immigrants were. Although those with language problems too limited to undertake the main numeracy test items are omitted in these figures, it may still be the case that a lesser familiarity with the language, as it relates to understanding the test instructions, explains some of the differences in numeracy level found between immigrants and non-immigrants. It must be remembered that the numeracy tasks were imbedded within the kind of documents and forms encountered in daily life in Canada.

Not surprisingly, a direct analysis of literacy level by the main language of respondents found that literacy problems were far more widespread among those Albertans who indicated that their main language was something other than English or French (only a nominal percentage of Albertans indicated that their main language was French). While 76% of English/French speaking respondents were at **Reading Level 4**, only 21% of those whose main language was other than English or French were at this level of ability. Similarly, 74% of

English/French speaking respondents were at **Numeracy Level 3**, as compared to only 40% of those who associated themselves with another language. This latter difference was found despite the fact that those with language problems too limited to undertake the test items were excluded from the analysis of numeracy. Since only 8% of Albertans indicated that their main language was something other than English or French, the results for the reported subsets of this group must be interpreted with caution due to high sampling variability. Nevertheless, the magnitude of differences that were found between the reading and numeracy skills of this group and the group who are mainly English or French speakers points to the existence of a real difference between these two groups.

Another personal background characteristic on which Statistics Canada obtained information was the experience of health problems or disabilities that could affect learning. The questions covered eye/visual trouble of the kind that is not corrected by glasses, hearing problems, speech disabilities, learning disabilities, and any other disabilities or health problems of six months or more that affected the respondents' learning. Respondents who indicated that they had experienced one or more of these problems were further queried to determine if they had the problem(s) before age 16, and if they currently have the problem(s). Since the estimates of the numbers of Albertans experiencing each of the above mentioned problems are based on a very small number of cases, our analysis of the relationship between particular health problems/disabilities and literacy is limited. In order to obtain enough cases with which to make a reliable comparison, we collapsed all those respondents who had admitted to ever having one or more of the previously mentioned health problems or disabilities into one group, and compared their literacy level to that of respondents who indicated that they had never experienced any of these problems. In total, 16% of respondents indicated that they had experienced, at some point in time, at least one health problem or disability that could affect learning.

As can be seen from Tables 8 and 9, the experience of these health problems/disabilities was associated with a lesser likelihood of being at the highest level of reading literacy or numeracy ability.

TABLE 8
READING LEVEL BY HEALTH/DISABILITY STATUS

	Ever had a Health Problem/Disability?	
	Yes	No/Not Stated
Language Problems and Level 1 & 2	19%*	10%
Level 3	19%*	17%
Level 4	62%	73%

* Figures should be interpreted with caution due to the high sampling variability associated with the small sample size.

TABLE 9
NUMERACY LEVEL BY HEALTH/DISABILITY STATUS

	Ever had a Health Problem/Disability?	
	Yes	No/Not Stated
Level 1 & 2	40%	26%
Level 3	60%	74%

Less than two-thirds (62%) of respondents who had admitted to having a health problem or disability of the nature that could affect learning were at **Reading Level 4**, as compared to 73% of those who didn't. A similar result was obtained with numeracy level: 60% of those with health problems/disabilities were at **Numeracy Level 3**, as compared to 74% of those who indicated that they had never experienced such problems.

While the experience of health problems or disabilities that could affect learning is significantly associated with literacy level, the relationship between literacy and actually having been placed in a special class for

those with learning difficulties is far stronger. Overall, close to 6% of those surveyed indicated that they were in a special class for students with learning difficulties prior to age 16. This group was far more likely to experience literacy problems than were those who had never been in special classes. While 73% of those who had never been in special classes were at **Reading Level 4**, only 46% of those who had been in learning difficulty classes as a child were at this level of reading literacy. The differences in numeracy skill were even more striking: 74% of those who had not been in special classes were at **Numeracy Level 3**, as compared to only 37% of those who had.[12] Although we would expect those with learning difficulties to experience a higher degree of literacy problems, the magnitude of the difference is striking.

Certainly, one of the most obvious factors associated with literacy is educational attainment. The higher the level of education an individual has attained, the lower the likelihood of illiteracy. While education naturally influences literacy (as one of its basic functions is to ensure that individuals are literate), it is also likely that one's level of literacy at crucial points in time could influence the level of education that an individual will attain. For example, a student who has not fully mastered the English language at the high school level is unlikely to have the prerequisites or the desire to pursue post-secondary education.

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[12] This latter figure should be interpreted with caution due to the high sampling variability associated with the small sample size.

TABLE 10

READING LEVEL BY EDUCATIONAL ATTAINMENT

	Less Than High School Graduation	Completed High School	Some Post-Secondary	Completed Post-Secondary
Language Problems & Level 1 and 2	25%	12%*	-	-
Level 3	30%	18%	-	9%*
Level 4	45%	70%	90%	91%

* Figures should be interpreted with caution due to the high sampling variability associated with the small sample size.

\- Figures are not releasable under Statistics Canada's guidelines for the release of estimates.

As can be seen from Table 10, having graduated from secondary school appears to mark a turning point at which the likelihood of illiteracy is greatly lessened. Only 45% of Albertans who had not completed high school were at **Reading Level 4**, as compared to 70% of those who had graduated from high school, and 90% and 91% respectively among those who had some post-secondary or a completed post-secondary education.[13]

As with reading literacy, the likelihood of having good numeracy skills increases markedly with high school graduation.

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[13] As mentioned earlier in the section on the overall literacy level of Albertans, Level 4 Reading was split into low and high subgroups within Level 4. About two-thirds of all respondents at Level 4 Reading were classed as low Level 4 readers. Disturbingly, even among those who had completed a post-secondary education, about half of the 91% who were Level 4 readers were in the lower group. Since what distinguishes high Level 4 from low Level 4 appears to be the ability to make some judgement about what was read, this finding raises concerns about whether or not the post-secondary system has imparted its graduates with adequate critical thinking skills and reading comprehension. However, we caution that the measurement of the low-high Level 4 split is not as refined as is the measurement of the four levels.

TABLE 11

NUMERACY LEVEL BY EDUCATIONAL ATTAINMENT

	Less Than High School Graduation	Completed High School	Some Post-Secondary	Completed Post-Secondary
Level 1 & 2	51%	27%	21*	8%*
Level 3	49%	73%	79%	92%

* Figures should be interpreted with caution due to the high sampling variability associated with the small sample size.

As can be seen from Table 11, only 49% of those who had attained less than secondary school graduation were at **Numeracy Level 3**, as compared to 73% of those who had graduated from high school, 79% of those with some post-secondary education and 92% of those who had completed a post-secondary education.

Parents' education was also significantly related to the literacy level of Albertans. Certainly, at least part of this relationship is indirect, through the influence of parental education on the educational attainment of respondents themselves. The influence of mothers' education on the reading ability of respondents seemed to turn on whether or not one's mother had completed high school. While only two-thirds (66%) of Albertans whose mothers' were not high school graduates were at **Reading Level 4**, the percentage rose to 84-85% among those whose mothers had attained a high school diploma or more. The relationship between fathers' education and reading literacy was not characterized by this marked distinction, but showed a more gradual and continuous positive association. Among those Albertans whose fathers did not complete high school, 73% were at Reading Level 4. This rose to 78% for respondents whose fathers had completed high school, to 80% among those whose fathers had some post-secondary education and 87% among those whose fathers had completed a post-secondary education.

The relationships between parents' education and numeracy level were not as clear, especially in the case of

mothers' education. Although there were differences in the numeracy skills of Albertans by mothers' education, the pattern of results was not meaningful.[14] The influence of fathers' education on numeracy level was somewhat clearer. Those who had fathers with at least some post-secondary education were more likely to be at **Numeracy Level 3** (80% among those whose fathers had some post-secondary and 82% among those whose fathers had completed post-secondary), than those whose fathers had attained less education (73% among those whose fathers had less than secondary graduation and 69% among those whose fathers had completed high school).

Given the relationship between education, employment status and income, it is not surprising that literacy level and income were found to be positively related. The link between poverty and illiteracy has been identified worldwide and Alberta is no different. Lower income Albertans are more likely to experience literacy problems than are higher income Albertans.

TABLE 12
LITERACY LEVEL BY PERSONAL INCOME FROM ALL SOURCES

Income Before Deductions	% at Level 4 Reading	% at Level 3 Numeracy
$9,999 or Less	64%	58%
$10,000 - $19,999	65%	65%
$20,000 - $29,999	78%	82%
$30,000 or More	83%	86%

While 83% of those whose annual personal income is $30,000 or more are at **Reading Level 4**, only 64% of those earning less than $10,000 are at this level. Similarly, 86% of those who earn $30,000 or more are at **Numeracy**

[14] Among Albertans whose mothers had less than a high school diploma, high school graduation or had completed a post-secondary education, 72-73% were at Numeracy Level 3. The only group that differed were Albertans whose mothers had some post-secondary education. The percentage of this group at Numeracy Level 3 was 82%.

Level 3, as compared to only 58% of those with personal incomes of less than $10,000. The relationship between literacy level and household income[15] gave a similar message. While the distinctions in ability among middle income earners were minor, the difference at the extremes were quite substantial.

TABLE 13
LITERACY LEVEL BY HOUSEHOLD INCOME FROM ALL SOURCES

Income Before Deductions	% at Level 4 Reading	% at Level 3 Numeracy
$19,999 or Less	53%	60%
$20,000 - $29,999	72%	72%
$30,000 - $39,999	69%	69%
$40,000 - $59,999	74%	76%
$60,000 or More	90%	89%

The vast majority (90%) of Albertans with household incomes of $60,000 or more are at Reading Level 4, as compared to just over half (53%) of Albertans with household incomes of less than $20,000. In the case of numeracy skill, 89% of those with household incomes of $60,000 or more are at Numeracy Level 3, as compared to only 60% of those from households earning less than $20,000.

3. Employment Status

The relationship between literacy and employment status is an important one. Certainly, literacy skills are a key element in one's employability. However, rather than attempting to ascertain the likelihood of employment, etc. by literacy level, this section of the report seeks only to describe the literacy skills found among those with varying degrees of involvement in the workforce. As can be seen from Table 14, those who were not employed at the time of the survey were more likely to experience literacy problems than those who were employed.

[15] For individuals from one person households, household income equals personal income.

TABLE 14
READING LEVEL BY EMPLOYMENT STATUS

	Currently Working	Not Working
Language Problems and Level 1 & 2	9%	17%
Level 3	16%	22%
Level 4	74%	61%

Three-quarters (74%) of employed respondents are at **Reading Level 4**, as compared to less than two-thirds (61%) of those who are not currently employed. A similar, but even stronger result, was found with numeracy skill.

TABLE 15
NUMERACY LEVEL BY EMPLOYMENT STATUS

	Currently Working	Not Working
Level 1 & 2	24%	43%
Level 3	76%	57%

While 76% of employed respondents were at **Numeracy Level 3**, only 57% of those not currently employed were at this level of numeracy skill. A strikingly high (43%) percentage of those not employed at the time of the survey had limited numeracy skills.

The differences between the reading and numeracy skills of the employed and those not currently working arise mainly from those non-workers who had not worked at all in the past 12 months. Among those Albertans not currently working, 83% of those who had worked at some time in the past year were at **Reading Level 4**, as compared to only 49% of those who had not worked at all. Similarly, 70% of those who were not currently working but had worked in the past year were at **Numeracy Level 3**,

as compared to only 48% of those who had not worked at all.

For those individuals who were currently working or who had worked at some point in the past year, the number of weeks worked showed little relationship with literacy. Although correlations between weeks worked and reading and numeracy level were statistically significant, substantively they were almost non-existent.

Those respondents who had not worked all 52 weeks of the past year were queried as to whether or not they had experienced unemployment at some point in the past 12 months, thus distinguishing those who had been unemployed from those who were out of the labour force. Those who were unemployed at some point in the past year were less likely to experience literacy problems than were those whose lack of employment was due to being out of the labour force. While 72% of those who had been unemployed were at **Reading Level 4**, only 59% of those who were out of the labour force were at this level. Similarly, those who had not been working due to unemployment were more likely (68%) to be at **Numeracy Level 3** than were those who were out of the labour force (58%).

These results indicate that the labour force as a whole, both the employed and unemployed, has a higher level of basic reading and numeracy skills than those out of the labour force. However, within the labour force there are certainly groups who are disadvantaged in terms of literacy skills. The moderate negative correlations between reading level and numeracy level and weeks of unemployment (-.28 and -.27 respectively) suggest that there may be important distinctions between the short-term unemployed and the long-term unemployed, with the latter being more likely to have lower levels of literacy.

Just as the unemployed are not a unidimensional group, neither are those who are out of the labour force. The most common main activities among those who had been out of the labour force in the past year were keeping house

(37%), attending school (27%) and retirement (24%), including those who were voluntarily idle.

TABLE 16
LITERACY LEVEL BY MAIN ACTIVITY WHEN OUT OF THE LABOUR FORCE

Income Before Deductions	% at Level 4 Reading	% at Level 3 Numeracy
Own Illness or Disability	67%	66%*
Kept House	69%	61%
Attended School	75%	60%
Retired/Voluntarily Idle	44%	61%
Other[16]	--	--

* Interpret with caution due to high sampling variability.
- Not releasable.

Those who had been out of the labour force because they were going to school were the most likely (75%) to be at **Reading Level 4**, as compared to those who were retired or voluntarily idle, who were the least likely (44%) to be at this level of reading literacy. Certainly, this relationship is related to the age and corresponding educational attainment levels of respondents. Retired persons are generally older, and older generations are less educated on average than are younger generations. However, **numeracy level** did not vary as dramatically by activity as did reading level, for those who were out of the labour force.

Returning to those who were currently employed or employed at some point in the past year, full-time workers were less likely than part-time workers to experience literacy problems.

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[16] It is not known what the main activities were for respondents who reported "other". Although the poor performance of this group on the literacy tasks suggests that these individuals may have been out of the labour force due to literacy problems, we cannot draw any reliable conclusions due to the extremely small sample size on which the estimates for this group are based.

TABLE 17
READING LEVEL BY TYPE OF EMPLOYMENT

	Full-Time	Part-Time
Language Problems Level 1 & 2	7%	15%*
Level 3	16%	16%*
Level 4	77%	69%

* Interpret with caution due to high sampling variability.

While 77% of those who were mainly full-time workers were at **Reading Level 4**, only 69% of those who were mainly part-time workers were at this level. A similar result was seen with numeracy level.

TABLE 18
NUMERACY LEVEL BY TYPE OF EMPLOYMENT

	Full-Time	Part-Time
Level 1 & 2	21%	39%
Level 3	79%	61%

Over three-quarters (79%) of full-time workers were at **Numeracy Level 3**, as compared to only 61% of part-time workers. These differences in the basic abilities of full-time and part-time workers may be due in part to a number of factors. First, part-time workers tend to be concentrated in low or unskilled occupations in certain segments of the service sector (eg., retail sales, food and beverage service, etc.). Second, many part-time workers may be youth who have not yet completed their formal education. Third, some part-time workers may prefer full-time employment but may be unable to secure such a position due to a lack of skills. A true test of the validity of these explanations would require further research.

Statistics Canada also obtained information about the class of worker (paid worker vs. self-employed) of respondents from the April 1989 Labour Force Survey.

This information pertains to the job held in April 1989 or to the last job held prior to that date within a five year period. As such, the following includes all those who had worked at some point in the past five years, and should not be taken to refer to only those who were employed at the time of the literacy survey.

TABLE 19
READING LEVEL BY CLASS OF WORKER

	Paid Worker (Private & Government) and Unpaid Family Worker	Self-Employed (Employer & Own Account)
Language Problems & Level 1 & 2	10%	--
Level 3	16%	23%*
Level 4	75%	61%

* Interpret with caution due to high sampling variability.
- Not releasable.

TABLE 20
NUMERACY LEVEL BY CLASS OF WORKER

	Paid Worker (Private & Government) and Unpaid Family Worker	Self-Employed (Employer & Own Account)
Level 1 & 2	24%	37%
Level 3	76%	63%

As can be seen from the preceding tables, while 75% of paid workers were at **Reading Level 4**, only 61% of self-employed workers were at this level of reading literacy. Similarly, 76% of paid workers were at **Numeracy Level 3**, as compared to only 63% of self-employed workers. While at first these results seem to be contrary to the stereotypical view of self-employed "entrepreneurs", they make sense when we examine the true nature of much self-

employment, in particular, the fact that own-account[17] self-employment (work by the self-employed who do not themselves have employees) is a growing form of work. The Economic Council of Canada indicates that own-account self-employment comprised over 10% of overall job growth in Canada in the past decade, and that most own-account self-employed are engaged in traditional services (i.e., news stand owners, one-truck movers, etc.) and have earnings that tend to be lower than those of paid employees.[18]

In addition to information on the class of worker, the April 1989 Labour Force Survey also provided information on the industries and occupations that respondents to the literacy survey were associated with. As with class of worker, the information pertaining to industry and occupation refers to the job held in April of 1989, or to the last job held prior to that date within a five year period. Due to the large number of industrial and occupational groupings, and the small sample sizes associated with many of them, we cannot produce reliable estimates of the reading and numeracy levels of persons associated with each individual industrial and occupational grouping. However, we can determine whether or not literacy level varies significantly by the industries and occupations that individuals are associated with, and identify some of the industries and occupations[19] that are characterized by persons with lower or higher than average literacy levels.

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17 Own-account self-employment contrasts with self-employment where the self-employed individual acts as an employer of other workers besides himself/herself.

18 Economic Council of Canada. Good Jobs, Bad Jobs: Employment in the Service Economy, Minister of Supply and Services Canada: 1990.

19 Figures associated with industries and occupations denoted by an asterisk should be interpreted with caution due to the high sampling variability associated with the small sample size. Many industries and occupations could not be commented on at all due to the very small sample sizes.

A oneway analysis of variance indicated that average **reading level** varied by industrial group. While the average overall reading level was 3.5, those who had never worked or had last worked more than five years ago had lower average levels of reading literacy, 2.8* and 3.1 respectively. Among individuals associated with an industry, those in Finance (3.8*) and Community Services (3.8), which includes education, health care, etc., had the highest average levels of reading literacy. Those associated with the Manufacturing (Durables) sector and the Personal Services industry had the lowest average levels of reading literacy, 2.9* and 3.1 respectively.

Another oneway analysis of variance indicated that average **numeracy level** also varied by industrial group. Among those associated with an industry, persons in Wholesale Trade, Finance*, Community Services, Business Services and Public Administration had the highest average levels of numeracy skill (2.8), as compared to those in the Personal Services industry who had the lowest average level of numeracy skill (2.4). The average numeracy level overall was 2.6.

As one would expect, given the range of skill levels required by various jobs, analyses of variance indicated that literacy level also varied by **occupation.** Those associated with Wood Products, Rubber and Plastics* occupations were among those with the lowest average levels of **reading** literacy (2.4), as compared to Architects, Engineers and Related,* and those in Library and Related* occupations, who were among those with the highest average levels of reading literacy (4.0). **Numeracy** level also varied by occupational group, with those associated with Wood Products, Rubber and Plastics* occupations having the lowest average level of numeracy ability (1.7), and Managers and Administrators (and Related*), Architects and Engineers*, Teachers and Related, Health Care Workers* and those in Library and Related* occupations being among those with the highest average levels of numeracy skill (2.9).

IV. SELF-ASSESSED LITERACY SKILLS AND NEEDS

In addition to directly assessing the literacy skills of Canadians in either official language, Statistics Canada also obtained self-evaluations of the abilities and needs of Canadians. While the direct assessment of literacy serves to objectify the skills of Albertans, the self-assessment examines the perceived abilities of the respondents themselves, with particular reference to the perceived adequacy of their skills at work and in other contexts. The direct assessment of literacy provides an indication of the magnitude of the illiteracy problem in Alberta, but the self-assessment may provide insight as to why people seek help/education to improve their skills, and as to how many people may do so. This section of the report provides an overview of the self-assessed literacy skills and needs of Albertans.

A. Literacy Skills and Needs by Labour Force Status

Statistics Canada obtained information on the perceived adequacy of the skills and needs of persons who were employed, unemployed, and out of the labour force. Each group was given a separate set of questions that pertained to their particular situation (skills needed at work, in job search, and in other contexts). The largest amount of information was obtained from **employed**[20] respondents, and it is this group who can best help us to gauge the literacy requirements of the workplace in Alberta.

Responses to questions about the reading and writing requirements encountered at work suggest that the vast majority of all jobs require individuals who have, at minimum, basic reading and writing skills. Figure 3 shows the reading and writing requirements of the current or most recent job held by Albertans who were employed at some point in the year of the survey. As can be seen from Figure 3, 86% of the employed indicated that their jobs required them to

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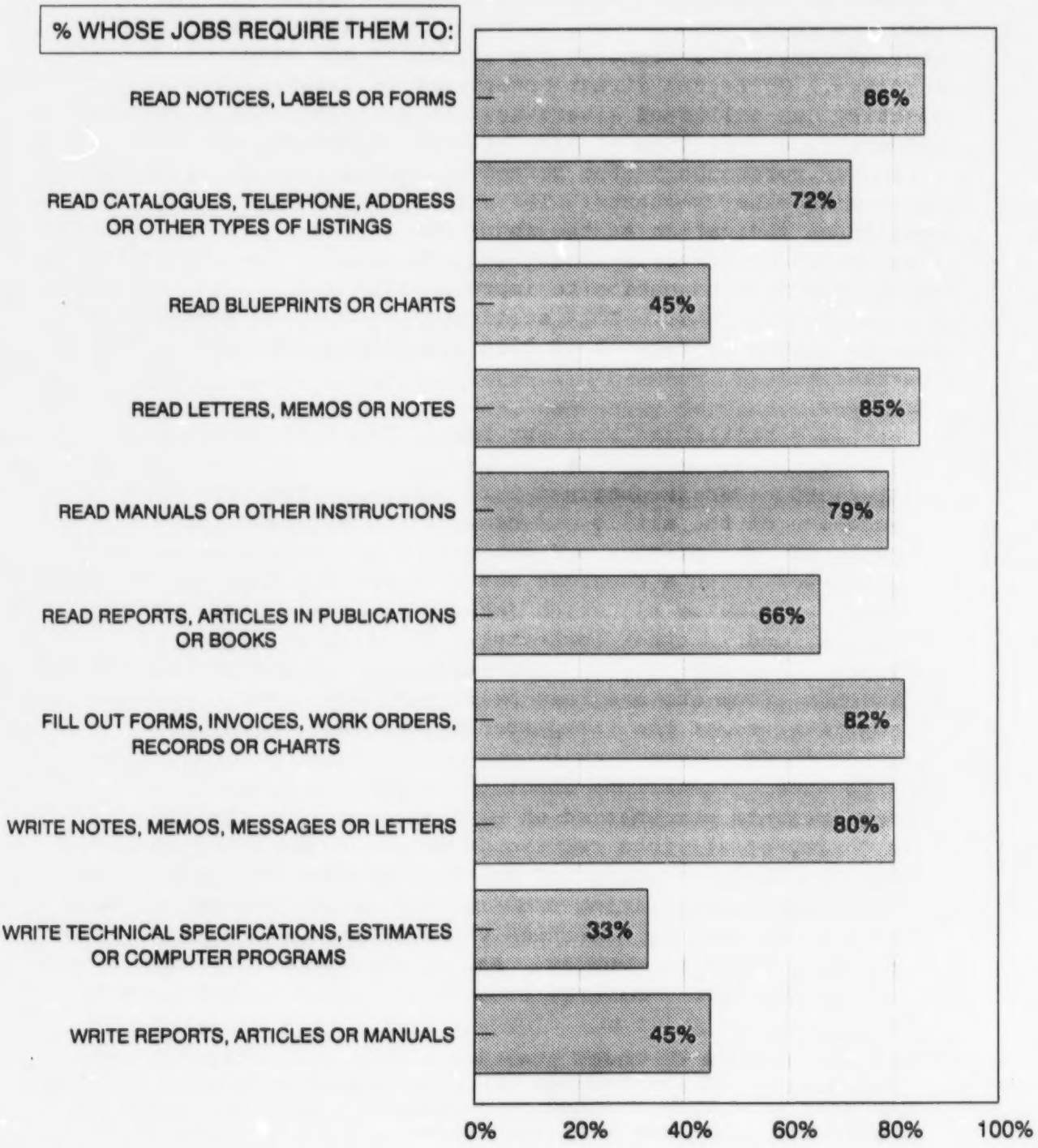
[20] For the purpose of these questions, both currently employed respondents and respondents who were employed at some point in the past year were treated as 'employed', and were asked to answer the questions with reference to their current or most recent job.

FIGURE 3

READING AND WRITING REQUIREMENTS OF EMPLOYMENT*



* Job requirements pertain to the current or most recent job held by persons who were employed at the time of the survey or within the past year.

read notices, labels or forms, and 85% were required to read letters, memos or notes. The vast majority (80%) also had to write notes, memos, messages or letters, and 45% indicated that they were required to write reports, articles or manuals.

Given the variety and extent of the reading and writing requirements of employment, it is encouraging to note that the vast majority of those employed in the past year feel that their reading skills in English are adequate for their current/most recent job. However, this does not necessarily mean that the vast majority of Albertans are capable of meeting all the literacy demands of the labour market. Rather, it is likely that many persons with reading and writing limitations are confined to unskilled segments of the labour market where literacy skills are not emphasized. Some evidence of the latter is apparent: while 95% of the employed indicated that their reading skills are adequate for their current job, a somewhat lesser percentage (88%) felt that their reading skills were not a limitation to their job opportunities. Similarly, while 93% of the employed group felt that their writing skills were adequate for their current/most recent job, only 85% stated that they feel that their writing skills do not limit their job opportunities. The converse of this is that among those who had worked in the past year, 11% feel that their reading skills are a limitation to their job opportunities and 14% feel that way about their writing skills.[21] Most (93%) employed respondents felt that their reading skills in English were adequate for other areas of their life (a corresponding question relating to writing skills was not asked).

Those employed respondents who perceived their reading or writing skills to be inadequate or limiting, whether for their current job, future job opportunities, or for other areas of life, were queried further about training programs. First, these respondents were asked to indicate what types of programs they felt may be of use to them. Table 21 shows the

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[21] A nominal percentage of respondents indicated that they didn't know if their reading and writing skills were limiting their job opportunities.

percentages of this group who indicated that the following type of programs would be useful to them.

TABLE 21
TRAINING PROGRAMS VIEWED AS USEFUL BY EMPLOYED ALBERTANS WITH SKILL INADEQUACIES

Type of Program	% that Consider Useful
Program that teaches job-related reading and writing skills.	83%
Program that helps you continue your formal education.	71%
Specialized courses that prepare you for a specific job.	75%
Program that teaches everyday reading and writing skills.	54%

As can be seen from Table 21, job-related literacy training, specialized job training and programs that aid in the pursuit of formal education were seen as the most useful types of programs by employed persons who perceived themselves to have skill inadequacies. Programs that deal directly with basic literacy, apart from a work-related context, were viewed as useful by only slightly over half (54%) of this group. Those respondents who did view these basic literacy programs as useful were further queried as to the types of skills training that they thought would help them deal with daily activities: Approximately 61% said a program that teaches them to read instructions such as on a medicine bottle or packaged goods would be helpful; 70% felt this way about programs that would help them read business or government forms; 65% were positive about the usefulness of programs that would teach them to read newspapers, magazines or books; and the vast majority (85%) would find a program that taught them to write letters, notes, etc. helpful. The most commonly preferred type of instructor for these types of training, chosen by half (52%) of the respondents who identified basic literacy programs as useful, was a teacher from a local school or community college (as opposed to a

volunteer tutor from a local literacy program, or a friend or family member).

All employed respondents who perceived their reading or writing skills to be inadequate or limiting were asked to indicate who they thought should pay for training programs, whether they be formal education programs, job-specific programs, or basic literacy programs. An essentially equal proportion of this group thought that the participant (79%) or the government (81%) should pay, and two-thirds (66%) thought that employers should cover the cost.[22] An estimated 15% of employed Albertans who perceived themselves to have skill inadequacies or limitations indicated that they were currently taking instruction to improve their reading and writing skills in English.[23] Another 65% indicated that they thought they might someday take such instruction. The remainder, who indicated that they would not take this type of instruction, were queried as to their reasons why. Unfortunately, these results are based on too few cases with which to generalize about the reasons people have for not enrolling in training programs. However, it is encouraging to note that the majority of employed Albertans who perceive themselves to have skill deficiencies are open to the possibility of literacy instruction.

Among those Albertans who were **unemployed** and actively involved in job search, 79% indicated that their reading skills were not a limitation to their job opportunities and just over half (53%) indicated that their writing skills were not a limitation.[24] All (100%) of this group indicated that their reading skills were adequate for them in other areas of their life. Since those who had worked in the past 12 months were considered with the employed group, too few cases remain to report on the training needs of those unemployed Albertans who viewed their literacy skills as a barrier to employment.

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[22] Multiple responses were accepted for this question.

[23] Figure should be interpreted with caution due to high sampling variability.

[24] The latter figure should be interpreted with caution due to high sampling variability.

Among those Albertans who were out of the labour force, the vast majority (94%) indicated that their reading skills were adequate for them in daily life. This is likely a reflection of lesser skill demands outside of the workplace. Since so few of this group perceived their skills to be inadequate for daily life, there are too few cases with which to generalize about the training needs of those who did identify an inadequacy.

B. Self-Reported Difficulties with Everyday Tasks

Although the literacy demands of daily life may be less than those encountered in the labour market, they are still extensive and varied in nature. Furthermore, many voluntary activities that can enhance one's knowledge and/or quality of life require good literacy skills. Statistics Canada found that many Albertans engage in activities in their free time that make use of literacy skills. For example, three-quarters (75%) of Albertans read newspapers, magazines or books daily and another 19% do so on a weekly basis, 58% of Albertans go to a public library several times a year or more, and 81% write letters or other materials exceeding one page in length at least several times a year.

Unfortunately, some Albertans experience the kind of difficulties with everyday tasks that make it problematic to deal with the demands of daily life. These Albertans are unlikely to view their skills as a means to the acquisition of knowledge, and are more likely to view their skills as a hindrance to effective functioning. A minority of Albertans aged 16-69 years indicated that they sometimes need help from others in dealing with fairly basic reading and writing tasks:

- 10% sometimes require help in reading newspaper articles;
- 25% sometimes need help reading information from government agencies, businesses or other institutions;
- 10% sometimes need help in filling out forms such as applications or bank deposit slips;

- 5% sometimes need help in reading instructions such as on a medicine bottle;

- and, 7% need help reading instructions on packaged goods in stores and supermarkets.

Certainly, these results indicate that a small minority of adult Albertans, by their own admission, have inadequate literacy skills to deal with everyday activities. Nevertheless, it is important to note that these findings also reflect the nature of the materials encountered in daily life. Groups who aim to reach the general population through the written word must take into account the range of literacy skills that are found among this population. The finding that an estimated one-quarter of Albertans sometimes need help in reading information from public and private organizations suggests that these organizations may not be effectively targeting their publications to the full range of their intended audience.

C. Overall Self-Assessment of Ability and Satisfaction with Skills

While obtaining an objective measure of the literacy skills of Albertans is important, it is also important to have an indication of how Albertans perceive their own skills. It is these perceptions, more than objective measures, that are likely to have the most important influence on an individual's decision to seek education or training to improve their literacy skills. No matter how poor we assess an individual's skills to be, they are unlikely to seek help unless they also view their skills as inadequate.

Respondents to the literacy survey were asked to rate their reading and writing skills in English on a scale of 1 to 5, with 1 being poor and 5 being excellent. Table 22 shows this self-assessment of the literacy skills of Albertans.

TABLE 22
SELF-ASSESSED READING AND WRITING SKILLS IN ENGLISH

1 Poor	2	3	4	5 Excellent
4%*	3%*	25%	38%	29%

* Interpret with caution due to high sampling variability.

Note: Percentages do not add to totals due to rounding.

The results indicated that approximately 7% of Albertans rate their skills poor (1 or 2 on the scale), 25% gave their skills a neutral rating (3 on the scale), and 68% of Albertans rated their skills as good to excellent (4 or 5 on the scale). Given that the majority of Albertans rated their own literacy skills positively, it is not surprising to learn that 63% of Albertans indicated that they are very satisfied with their reading and writing skills in English. Another 26% indicated that they are somewhat satisfied with their skills, and only 11% indicated that they are either somewhat or very dissatisfied with their skills.

Satisfaction with one's reading and writing skills was positively correlated with both directly assessed reading ability and self-assessed reading and writing skills, although the relationship was stronger with the latter.

TABLE 23
SATISFACTION WITH LITERACY SKILLS BY READING LEVEL

	Reading Level		
	Language Problems and Level 1 & 2	Level 3	Level 4
Very or Somewhat Dissatisfied	62%	-	4%*
Somewhat Satisfied	21%*	34%	25%
Very Satisfied	18%*	57%	72%

* Interpret with caution due to high sampling variability.

- Not releasable.

As can be seen from the preceding table, 72% of those at Reading Level 4 are very satisfied with their reading and writing skills in English, as compared to only 18% of those at Reading Levels 1 and 2 (including those with language problems). Almost two-thirds (62%) of those at Reading Levels 1 and 2 are very or somewhat dissatisfied with their reading and writing skills.

TABLE 24
SATISFACTION WITH LITERACY SKILLS BY SELF-ASSESSED READING AND WRITING SKILLS

	Self-Assessed Rating of Ability		
	Poor 1-2	Neutral 3	Good-Excellent 4-5
Very or Somewhat Dissatisfied	84%	17%	-
Somewhat Satisfied	-	57%	15%
Very Satisfied	-	26%	84%

- Not releasable due to high sampling variability.

Not surprisingly, 84% of those who rated their skills positively were very satisfied with their reading and writing skills in English, as compared to only 26% who rated their ability as neither poor or good. The vast majority (84%) of those who perceived their skills to be poor were either very or somewhat dissatisfied with their literacy skills.

Finally, it is important to note that there is a strong relationship between the objective measure of reading skills as directly assessed by the literacy tasks, and the perceived skills of respondents, particularly at the higher levels of ability. As can be seen from Table 25, the higher the directly assessed reading level of Albertans, the more likely they were to perceive their literacy skills positively.

TABLE 25
SELF-ASSESSED PERCEPTIONS OF READING AND WRITING SKILLS BY READING LEVEL

	Reading Level		
	Language Problems and Level 1 & 2	Level 3	Level 4
Poor 1-2	43%	-	-
Neutral 3	42%	45%	18%
Good-Excellent 4-5	-	46%	81%

- Not releasable due to high sampling variability.

The vast majority (81%) of those at Reading Level 4 rated their reading and writing skills in English as good to excellent, as compared to only 46% at Reading Level 3. Approximately 43% of those at Reading Levels 1 and 2 rated their own literacy skills as poor. It appears that those at higher levels of ability generally have quite accurate perceptions of their skill. There is somewhat less correspondence among the actual and perceived abilities of those with lower skill levels. Over half of those who were deemed to be essentially illiterate in either of Canada's official languages (Levels 1 and 2 including those with language problems), did not view their own skills as poor (although most did not view their skills positively either). This result suggests that a substantial portion of those with serious literacy problems may not seek help with their skills in the form of literacy programming, due to the nature of their own perceptions of their ability which tend to downplay the degree of their skill deficiencies.

V. CONCLUSION

Statistics Canada's Survey of Literacy Skills Used in Daily Activities (LSUDA) provides the first opportunity to directly assess the extent of the illiteracy problem in Alberta. In contrast to past literacy research, which used indirect and somewhat arbitrary measures of literacy, this survey directly measured the literacy abilities of Albertans through a series of tasks that approximate those encountered in everyday life in Canada. This direct assessment was further supplemented by a self-assessment of the literacy skills and needs of Albertans, allowing us to gain insight into how Albertans perceive their own skills and how these perceived skills match with objective measures of ability.

The results of the survey indicated that the large majority of Albertans have literacy skills sufficient to meet most everyday requirements, and there is a lower incidence of illiteracy in Alberta than in Canada as a whole. Nevertheless, a minority of Albertans have skills which limit them, at least to some degree, in their ability to deal with the printed material commonly encountered in daily life. These individuals range from those with virtually no skills, to those who can function when the tasks involved are relatively simple.

Given the range of abilities found among those with skill limitations, and the diverse nature of the groups most likely to have low skill levels, it is important to realize that a corresponding range of responses to the problem is required. While some Albertans may benefit from general educational upgrading, others require programs that deal directly with imparting basic literacy skills, second language training, or workplace literacy. Furthermore, it must be remembered that not all Albertans with low skill levels may readily seek help in the form of literacy programming. While the match between the perceived skills of respondents and the objective measure of skills, as assessed by the test, was quite high among those with adequate literacy skills, there was somewhat less correspondence among those with poor skill levels.

Nonetheless, in identifying those groups most likely to experience literacy problems, the survey has highlighted the areas in which both policy makers and service providers should

direct their efforts. Illiteracy is not a randomly occurring phenomenon. The present survey has served to confirm generally held notions about who is likely to experience literacy problems. However, it has also gone a step further. The literacy survey represents the first attempt to directly estimate the magnitude of the literacy problem in Alberta and the degree of the differences in abilities between various groups. As such, it is hoped that the results of this survey will aid educators, service providers, the government, employers and the public in identifying the most effective ways to improve the overall literacy level of Albertans.